Colonial Nesting Wading Birds

Black-crowned Night-Heron *Nycticorax nycticorax*
Glossy Ibis *Plegadis falcinellus*
Great Blue Heron *Ardea herodias*
Great Egret *Casmerodius albus*
Green Heron *Butorides virescens*
Little Blue Heron *Egretta caerulea*
Snowy Egret *Egretta thula*
Tricolored Heron *Egretta tricolor*
White Ibis *Eudocimus albus*
Yellow-crowned Night-Heron *Nyctanassa violacea*

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DESCRIPTION


Photo of White Ibis by SC DNR

Taxonomy and Basic Description

Colonial nesting wading birds are a taxonomically diverse group composed of several different genera. Members of this guild belong to two families: Ardeidae (herons and egrets) and Plataleidae (ibises). Colonial nesting wading birds are medium to large birds that have long legs, necks and bills; these features are specially adapted for capturing prey while wading in shallow water. The glossy and white ibises have long, narrow bills that enable sub-surface, tactile feeding.

Colonial wading birds are among the most striking birds in North America. The white ibis, great and snowy egrets are white birds; however the white ibis has black primaries, visible during flight. These three species are easily distinguished from each other by size or color of the bill or legs: the white ibis has a scarlet bill and legs; the snowy egret has yellow feet; and the great egret is tall with a yellow bill and black legs. Juvenile little blue herons are also white. On the other extreme, the glossy ibis appears as an all dark bird from a distance. Upon closer inspection, the glossy ibis is actually a glossy chestnut color.


Photo of Snowy Egret by SC DNR

Little blue, great blue and tricolored herons as well as the night-herons appear as their names suggest. The little blue heron is a darker blue and considerably smaller than the great blue heron. The great blue has white on the crown, cheeks and a stripe down the neck. The tricolored heron is slate blue above and on the neck, with a white abdomen and white strip on the front of the neck. The yellow-crowned night-heron is overall a grayish bird with yellow

on the crown and white on its head and cheeks. The black-crowned night-heron is also a grayish bird with black on its crown and down its back. The belly of this bird is white. The green heron is stocky with relatively shorter legs, a dark bill, rust colored neck, black cap and back, and grey underparts.

Status

Members of this guild are of conservation concern because their reproductive strategy leaves them especially vulnerable to habitat degradation. As the name suggests, colonial wading birds nest in large colonies; hundreds of birds can nest in one tree. Although this strategy affords benefits in terms of predator avoidance, it also makes them especially vulnerable to habitat loss because impacts to a small area (colony) can affect hundreds of breeding pairs of several different species.

In addition to this vulnerability to habitat alterations, several members of this guild are of special concern due to declining population trends (Sauer et al. 2004). With the exception of the great blue heron, all of these colonial wading bird species have been in decline in recent years in South Carolina. The little blue heron and white ibis are listed as Birds of Conservation Concern (USFWS 2002).

POPULATION DISTRIBUTION AND SIZE

All of the colonial nesting wading birds can be found in the coastal zone of South Carolina. The glossy ibis, tricolored heron and snowy egret are restricted to the coastal zone, while the great egret, little blue heron and white ibis can range into the coastal plain. The yellow-crowned night heron is an uncommon breeder in the piedmont (Post and Gauthreaux 1989). The black-crowned night heron is a coastal breeder, is uncommon in the coastal plain away from coast and is not found in sandhills, piedmont or mountains. The great blue heron can be found through out the state.

Complete ground censuses of wading bird nesting colonies were conducted in 1988, 1989, 1994 and 1996. Counts of the total number of wading bird nests fluctuated between years, but high counts of 59,483 and 52,587 in 1989 and 1996 were representative of the population (Dodd and Murphy 1997). The fluctuations were primarily a result of one species: white ibis. Nesting populations of members of this guild appeared to be stable during this period.

Since that time, aerial estimates indicate that most species have declined precipitously. This was particularly apparent during years of extended drought from 1999 through 2003. Although rainfall has returned to near normal levels, there has not been a return to historic nest numbers.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Nesting sites are found in a variety of habitats. Colony sites for most guild members are found on islands in fresh and brackish water ponds. Water surrounding a nesting site deters mammalian predators and alligators frequently provide an additional deterrent. When suitable island sites are lacking, guild members may use vegetation around the edge of a pond for nesting. These sites

are generally unsuccessful as a result of predation except for ponds in residential areas that are not affected by predators. Colonies are also sustained on estuarine islands that are free of mammalian predators. While most species in this guild prefer snags and mature trees with large lateral limb structures, yellow-crowned night-herons, little blue herons, tricolored herons and snowy egrets nest lower and prefer shrubby habitat.

Great blue herons nest in mature pines on hammocks islands, along the marsh-upland ecotone or in riparian swamps. Further away from the coast, they nest on islands or along the riparian zone of rivers and man-made water bodies, such as reservoirs.

Colonial nesting wading birds can be found feeding in a wide variety of aquatic habitats. The glossy and white ibis can use their long bills to probe the soil for invertebrates in moist soil and shallow water. The great blue heron, tricolored heron, snowy egret, green heron, great egret, little blue heron, black-crowned and yellow-crowned night herons all feed in shallow water, with the great blue heron and great egret being able to tolerate deeper water owing to their long legs. Colonial wading birds feed primarily on fish, crabs, crayfish and amphibians. The great blue heron will also feed opportunistically on small birds and mammals. Each bird has its own feeding style. Snowy egrets are very active feeders and purse their prey while great egrets and great blue herons are 'lie-in-wait' predators.

CHALLENGES

Loss of feeding, roosting and breeding habitat is the biggest problem for colonial wading birds (Dodd and Murphy 1998). Suitable nesting and roosting habitat is reduced by removal of vegetation during timber harvest and residential and commercial development. Shrub-type nesting and roosting habitat is lost through removal of vegetation, mainly for aesthetic reasons, along the edge of ponds and impoundments.

While South Carolina has been relatively successful in protecting its wetland resources that represent important foraging habitat for wading birds, significant losses have occurred in freshwater non-tidal wetlands. The amount and quality of foraging habitat will ultimately determine the status of colonial wading bird populations.

Human disturbance is a problem for nesting colonial wading birds. Short-term disturbances such as airplanes, boats, vehicles and human presence may cause the birds to fly from their nests, which can result in nest abandonment. Docks result in disturbance to feeding birds because of the increased boat traffic. The docks themselves are frequently used by the birds for foraging because fish concentrate in the shade of the docks.

Several types of environmental contaminants are problems for colonial wading birds. Petroleum from oil spills damages bird feathers and causes mortality. Chemicals such as DDT and PCBs are not currently widespread; however they do cause reduced reproductive success. Metals such as mercury and lead can concentrate and lead to reduced survivorship and reproductive success. Environmental contaminants also reduce availability of prey items. Nonpoint sources of pollution can reduce productivity of coastal marshes.

Diseases such as cholera and botulism are particularly problematic for colonial wading birds. In the event of an outbreak of these diseases, they spread easily because the birds nest in such high densities.

Other human-related causes of mortality include collisions with power lines and entanglement in fishing line, gill nets, drift nets and various forms of plastics (Dodd and Murphy 1998).

Competition with cattle egrets (*Bubulcus ibis*) and double-crested cormorants (*Phalacrocorax auritus*) for food resources and nesting sites can reduce nesting success for guild members (USFWS 2003).

CONSERVATION ACCOMPLISHMENTS

The Lacey Act of 1900 was the first major step toward protecting wading birds. The Lacey Act was passed, in part, in response to the millinery trade to regulate interstate and international trade of bird parts. Hundreds of thousands of herons and egrets, among other birds, were killed for their nuptial plumes, used in ladies hats and fashionable clothing (Ogden 1978).

The Migratory Bird Treaty Act of 1918 made it illegal for a person to possess any migratory bird or part, with the exception of game birds during the proper season, as well as the possession of nests and eggs. Prior to these Acts, market hunting was responsible for population declines in many bird species.

The South Carolina Department of Natural Resources (SCDNR) collected baseline data during statewide ground census counts were 1988, 1989, 1994 and 1996. Statewide aerial surveys have been conducted annually since 1988.

CONSERVATION RECOMMENDATIONS

- Protect and manage nesting colonies through acquisition, technical guidance or construction of new sites.
- Develop best management practices for colony sites.
- Integrate management for colonial wading birds into traditional waterfowl management of currently impounded wetlands by timing draw downs during key feeding periods (post fledging).
- Partner with industry and permitting agencies to deter development of important wading bird breeding, feeding and roosting sites.
- Partner with timber industry to develop best management techniques for important wading bird breeding and roosting sites.
- Establish buffer zones to protect tree and shrub nesting colonies during the nesting season.
- Establish a buffer zone of 30 m along (94 feet) the marsh/upland interface of shorelines to protect roosting and foraging sites. Mature trees, snags and shrubs should be maintained within this zone.
- Partner with local communities to minimize boat traffic in small creeks, mudflats and formerly impounded rice fields to reduce disturbance of foraging birds.

- Partner with permitting agencies and local communities to restrict the development of new docks to wide channels and bay shoreline and/or encourage the use of community docks, as opposed to single-dwelling docks.
- Partner with industry to encourage the inclusion of island habitat suitable for nesting wading birds in new pond construction. Islands should be located near the pond center to discourage mammalian predators.
- Partner with permitting agencies and industry to place landfills, power lines and towers away from colonies and wetland areas.
- Partner with the appropriate agency to restrict development of small marsh islands or hammocks of less than 12 acres (4.9 hectares).
- Complete a statewide ground census of nesting wading birds for two consecutive years at least every ten years.
- Annually survey colonies containing federally endangered birds.
- Provide permitting agencies with current information on known nesting wading bird colonies by updating distribution maps every year.
- Partner with appropriate permitting agency to reduce input of chemical contaminants into marine and aquatic systems.
- Encourage the use of Best Management Practices in residential and commercial development activities.
- Create an educational program for homeowners emphasizing the importance of including vegetation around ponds and lakes for bank stabilization and wildlife habitat.
- Partner with law enforcement to reduce littering in aquatic and marine systems.
- Educate the public about the harmful effects of plastic litter and abandoned nets on birds and other marine and aquatic species.
- Decrease the potential for disease organisms by discouraging activities such as depositing raw or partially treated wastewater into wetlands.
- Determine the current population status of colonial nesting wading birds and document the reasons for declines.
- Document water quality issues at colony sites.
- Determine best management practices for multi-species management of impounded marsh habitat.
- Determine the effects of human activity on wading bird foraging efficiencies.
- Determine the importance of roost sites and their relationship to available foraging habitat.

MEASURES OF SUCCESS

Protecting important habitat as outlined above should provide stable resources and enable populations to rebound. The ultimate measure of success would be to document stable to increasing population trends of colonial wading birds. Colonial wading bird nesting should total 50,000 pairs distributed widely across coastal plain counties.

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